

REMARKS

Please reconsider the application in view of the foregoing amendments and the following remarks.

Status of Claims

Claims 1-6, 8 and 9 are pending in the present application. Claim 7 has been withdrawn from consideration. Claims 1 and 8 are herein amended. No new matter has been entered.

Claim Objections

The Examiner has rejected to Claim 1 because of the following informalities: line 3 has an extra space between “a” and “pair”. Applicants herein amend claim 1 to overcome this objection.

Claim Rejections - 35 USC § 112

The Examiner has rejected claims 8-9 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants herein amend claim 8 to overcome this rejection.

As to the Merits

As to the merits of this case, the Examiner sets forth the following rejections:

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Claims 1 and 4 were rejected under 35 U.S.C. 102(e) as being anticipated by **Kuramoto et al (2004/0081565)**.

Claims 2 and 8-9 were rejected under 35 U.S.C. 103(a) as being unpatentable over **Kuramoto** in view of **Weatherston et al (USP 3,667,874**, hereinafter referred to as “Weatherston ’874”) or **Weatherston (USP 3,922,117)** hereinafter referred to as “Weatherston ’117”).

Claims 3-4 were rejected under 35 U.S.C. 103(a) as being unpatentable over **Kuramoto** in view of **Crinquette et al (4,887,941)** or **Moraan et al (4,850,806)**.

Claim 5 was rejected under 35 U.S.C. 103(a) as being unpatentable over **Kuramoto** in view of **Baubron (4,442,353)** or **Becker (5,584,669)**.

Claim 6 was rejected under 35 U.S.C. 103(a) as being unpatentable over **Kuramoto** in view of **Miura et al (6,056,510)**.

Each of these rejections is respectfully traversed.

Claim Rejections - 35 U.S.C. §102

Independent Claim 1

In order to anticipate an invention under 35 U.S.C. §102, the prior art reference must not only disclose all elements of the claim within four corners of the document, but must also disclose those elements arranged as in the claim.

Claim 1, as previously presented, is drawn to at least ... *a booster pump connected to a vacuum chamber, said booster pump having a pair of multistage Roots-type pump rotors; and a main pump connected to said booster pump, said main pump having a pair of multistage pump rotors*

For example, as illustrated in Fig. 1 of the present specification, the first vacuum pump 1 is a Roots-type positive-displacement vacuum pump **having a pair of multistage Roots-type pump rotors 20** and the second vacuum pump 2 is a screw-type positive-displacement vacuum pump **having a pair of multistage screw-type pump rotors 40**.

In other words, the invention in claim 1 has a feature that both the booster pump and the main pump have a pair of multistage pump rotors and the booster pump is provided upstream of the main pump so that the pumping speed of the main pump can be increased. For example, the main pump having a pumping speed ranging from 1,000 to 3,000 1/min can be increased to a pumping speed ranging from 10,000 to 50,000 1/min.

On page 3, item 7 of the Final Office Action, it is alleged that “Kuramoto discloses an evacuation apparatus comprising: a booster pump (61) connected to a vacuum chamber (65), said booster pump having a pair of multistage Roots-type pump rotors (multi stage because the entrance (first stage) has a different pressure than the exit (second stage); and a main pump (11) connected to said first booster pump, having a pair of multistage pump rotors (multistage because the inlet has a different pressure than the outlet)”

Applicants respectfully submit that the Examiner has erred substantively as to the factual findings based on the teachings of Kuramoto. More specifically, Kuramoto explicitly teaches that the structure of Booster pump 61 is a single-stage root pump and NOT *the booster pump having a pair of multistage Roots-type pump rotor* as recited in claim 1. In particular, Kuramoto, in paragraph [0029], lines 1-7, teaches as follows: “[a]s shown in FIGS. 1 and 2, **a great structural difference** between the main pump 11 and the booster pump 61 lies in that the main pump 11 is a multi-stage (five stages in the embodiment) root pump, which performs gas discharging in multiple stages, **whereas the booster pump 61 is a single-stage root pump, which performs gas discharging in a single stage** [See also Figs. 1 and 2].”

In view of the foregoing, Applicants respectfully submit that Kuramoto does not disclose at least *a booster pump connected to a vacuum chamber, said booster pump having a pair of*

multistage Roots-type pump rotors; and a main pump connected to said booster pump, said main pump having a pair of multistage pump rotors as recited in claim 1.

As noted above, in order to anticipate an invention under 35 U.S.C. §102, the prior art reference must not only disclose all elements of the claim within four corners of the document, but must also disclose those elements arranged as in the claim.

Since Kuramoto does not disclose all elements of claim 1, Applicants submit that the rejection as anticipated under 35 U.S.C. § 102 of claims 1 and 4 is improper and respectfully request that it be withdrawn.

Claim Rejections - 35 U.S.C. §103

In addition, dependent claims 2-6 and 8-9 are also patentable by virtue of their dependency on claim 1 because they incorporate by reference at least the distinguishing features of claim 1 as discussed above.

Conclusion

The Claims have been shown to be allowable over the prior art. Applicants believe that this paper is responsive to each and every ground of rejection cited in the Office Action dated January 28, 2010, and respectfully request favorable action in this application. The Examiner is invited to telephone the undersigned, applicants' attorney of record, to facilitate advancement of the present application.

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If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,
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